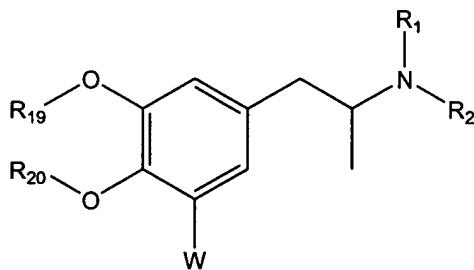


Specification Amendments

Please amend the specification as follows:

On page 3, please amend the paragraphs at page 3, line 2, to page 5, line 2, as follows:

One embodiment of the present invention is a compound of the formula:



Formula I

wherein: R<sup>19</sup> is lower alkyl or is taken together with R<sup>20</sup> to form a ring, which may be a five- or six-member ring;

R<sup>20</sup> is lower alkyl, or is taken together with R<sup>19</sup> to form a ring as discussed above,

R<sup>1</sup> is H or lower alkyl,

R<sup>2</sup> is H, lower alkyl, a protecting group or

- (a) -(CH<sub>2</sub>)<sub>a</sub>C(O)(CH<sub>2</sub>)<sub>b</sub>SR<sup>3</sup>, wherein a is 0 to 5, b is 1 to 5 and R<sup>3</sup> is H or lower alkyl or (CH<sub>2</sub>)<sub>c</sub>C(O)NR<sup>4</sup>R<sup>5</sup> wherein c is 1 to 5, R<sup>4</sup> is H or lower alkyl and R<sup>5</sup> is H, an immunogenic carrier or a label, or
- (b) (A)<sub>d</sub>(Q)<sub>n</sub> wherein Q is H or -(CH<sub>2</sub>)<sub>e</sub>CH(R<sup>8</sup>)(CH<sub>2</sub>)<sub>f</sub>OC(O)(CH<sub>2</sub>)<sub>g</sub>R<sup>9</sup> being H only when d is 1 wherein A is -C(O)(CH<sub>2</sub>)<sub>h</sub>C(O)NR<sup>10</sup>((CH<sub>2</sub>)<sub>j</sub>O(CH<sub>2</sub>)<sub>k</sub>O)<sub>m</sub>(CH<sub>2</sub>)<sub>2</sub>NR<sup>11</sup>-, d is 0 or 1, n is 0 or 1 wherein one of d or n is 1, h is 1 to 5, R<sup>10</sup> is H or lower alkyl, j is 1 to 5, k is 1 to 5, m is 1 to 3, R<sup>11</sup> is H or lower alkyl, e is 1 to 5, R<sup>8</sup> is OH or H, f is 1 to 5, g is 0 to 5, and R<sup>9</sup> is H, an immunogenic carrier or a label;

W is H or JR<sup>14</sup> being H when R<sup>2</sup> is other than H or lower alkyl, wherein

J is O or S,

R<sup>14</sup> is H, lower alkyl, a protecting group, or

$-(CH_2)_rC(O)NR^{15}(CH_2)_s(D)R^{16}$ , wherein r is 1 to 5, R<sup>15</sup> is H or lower alkyl, s is 1 to 5, D is S, O, or NH, t is 0 or 1 being 0 when R<sup>16</sup> is maleimidyl or succinimidyl, R<sup>16</sup> is H, maleimidyl, succinimidyl, or  $-(CH_2)_qC(O)NR^{17}R^{18}$ ,

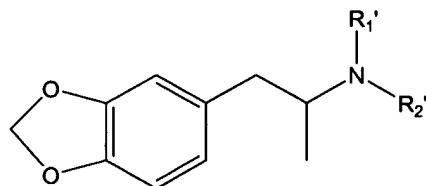
q is 1 to 5,

R<sup>17</sup> is H or lower alkyl,

R<sup>18</sup> is H, lower alkyl, an immunogenic carrier or label,

and including the acid salts thereof.

Another embodiment of the present invention is a compound of the formula:



Formula II

wherein: R<sup>1</sup> is H, lower alkyl or a protecting group,

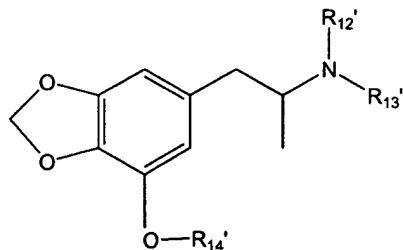
R<sup>2</sup> is a protecting group, or

(a)  $-(CH_2)_aC(O)(CH_2)_bSR^{3*}$ , wherein a is 0 to 5, b is 1 to 5 and R<sup>3\*</sup> is H or lower alkyl or  $(CH_2)_cC(O)NR^{4*}R^{5*}$ , wherein c is 1 to 5, R<sup>4\*</sup> is H or lower alkyl and R<sup>5\*</sup> is H, an immunogenic carrier or a label, or

(b) (A)<sub>d</sub>(Q)<sub>n</sub> wherein Q is H or  $-(CH_2)_eCH(R^{8*})(CH_2)_fOC(O)(CH_2)_gR^{9*}$ , being H only when d is 1 wherein A is  $-C(O)(CH_2)_hC(O)N(R^{10*})((CH_2)_jO(CH_2)_kO)_m(CH)_pNR^{11*}$ , d is 0 or 1, n is 0 or 1 wherein one of d or n is 1, h is 1 to 5, R<sup>10\*</sup> is H or lower alkyl, j is 1 to 5, k is 1 to 5, m is 1 to 3, R<sup>11\*</sup> is H or lower alkyl, e is 1 to 5, R<sup>8\*</sup> is OH or H, f is 1 to 5, g is 0 to 5, and R<sup>9\*</sup> is H, an immunogenic carrier or a label,

and including the acid salts thereof.

Another embodiment of the present invention is a compound of the formula:

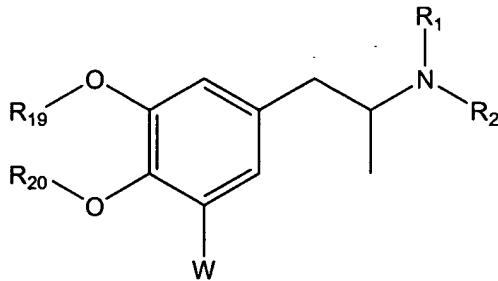


Formula III

wherein:  $R^{12}$ , is H or lower alkyl,  
 $R^{13}$ , is H or lower alkyl,  
 $R^{14}$ , is a protecting group, or  $-(CH_2)_rC(O)NR^{15}, (CH_2)_s(D)_tR^{16}$ , wherein r is 1 to 5,  
 $R^{15}$ , is H or lower alkyl, s is 1 to 5, D is S, O, or NH, t is 0 or 1 being 0 when  $R^{16}$ , is maleimidyl or succinimidyl,  $R^{16}$ , is H, a protecting group, maleimidyl or succinimidyl, or  $-(CH_2)_qC(O)NR^{17}, R^{18}$ , wherein q is 1 to 5,  
 $R^{17}$ , is H, lower alkyl or a protecting group,  
 $R^{18}$ , is H, lower alkyl, a protecting group, an immunogenic carrier or label,  
and including the acid salts thereof.

Please amend the paragraph at page 8, line 3, to page 9, line 8, as follows:

As mentioned above, compounds include compounds of the formula:



Formula I

wherein:  $R^{19}$  is lower alkyl or is taken together with  $R^{20}$  to form a ring, which may be a five- or six-member ring, usually a five-member ring;

$R^{20}$  is lower alkyl, or is taken together with  $R^{19}$  to form a ring as discussed above,

$R^1$  is H or lower alkyl,

$R^2$  is H, lower alkyl, a protecting group or

- (a)  $-(CH_2)_aC(O)(CH_2)_bSR^3$ , wherein a is 0 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, b is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, and  $R^3$  is H or lower alkyl or  $(CH_2)_cC(O)NR^4R^5$  wherein c is 1 to 5,  $R^4$  is H or lower alkyl and  $R^5$  is H, an immunogenic carrier or a label, or
- (b)  $(A)_d(Q)_n$  wherein Q is H or  $-(CH_2)_eCH(R^8)(CH_2)_fOC(O)(CH_2)_gR^9$  being H only when d is 1 wherein A is  $-C(O)(CH_2)_hC(O)NR^{10}((CH_2)_jO(CH_2)_kO)_m(CH_2)_lNR^{11}-$ , d is 0 or 1, n is 0 or 1

wherein one of d or n is 1, h is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, R<sup>10</sup> is H or lower alkyl, j is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, k is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, m is 1 to 3, 1 to 2, R<sup>11</sup> is H or lower alkyl, e is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, R<sup>8</sup> is OH or H, f is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, g is 0 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, and R<sup>9</sup> is H, an immunogenic carrier or a label;

W is H or JR<sup>14</sup> being H when R<sup>2</sup> is other than H or lower alkyl, wherein

J is O or S,

R<sup>14</sup> is H, lower alkyl, a protecting group, or

-(CH<sub>2</sub>)<sub>r</sub>C(O)NR<sup>15</sup>(CH<sub>2</sub>)<sub>s</sub>(D)<sub>t</sub>R<sup>16</sup>, wherein r is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, R<sup>15</sup> is H or lower alkyl, s is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, D is S, O or NH, t is 0 or 1 being 0 when R<sup>16</sup> is maleimidyl or succinimidyl, R<sup>16</sup> is H, maleimidyl, succinimidyl, or

-(CH<sub>2</sub>)<sub>q</sub>C(O)NR<sup>17</sup>R<sup>18</sup>, wherein q is 1 to 5,

~~q is 1 to 5~~, 1 to 4, 1 to 3, 2 to 4, 1 to 2,

R<sup>17</sup> is H or lower alkyl,

R<sup>18</sup> is H, lower alkyl, an immunogenic carrier or label,

and including the acid salts thereof.